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7590 12/17/2007  
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EXAMINER

LAZORCIK, JASON L

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

12/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/803,015

Applicant(s)

KIKUCHI, KIMIHIRO

Examiner

Jason L. Lazorcik

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-9 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9 and 11-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 1, 2007 has been entered.

### ***Claim Objections***

**Claim 11** is objected to because of the following informalities: Claim 11 depends from cancelled claim 10. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

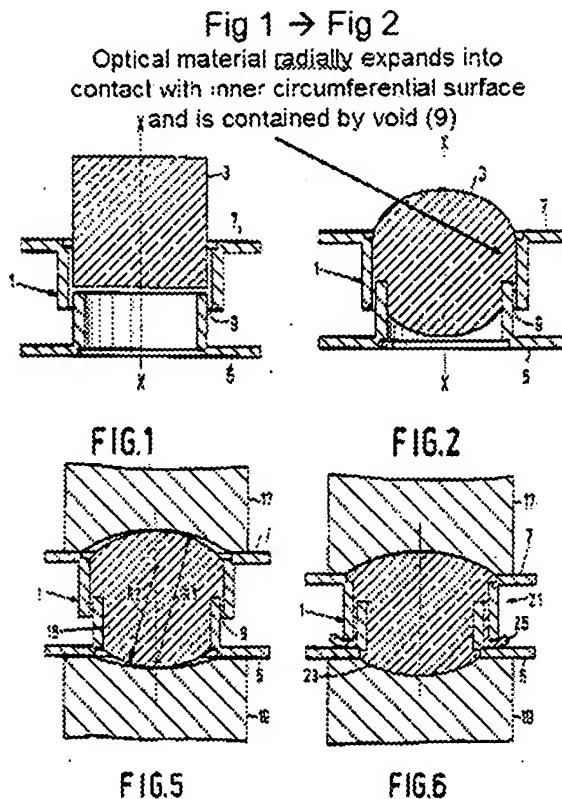
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-2, 4, 8, 12-16, 18, and 19** are rejected under 35 U.S.C. 102(b) as being anticipated by Bartman (US 4,891,053).

Bartman teaches positioning a lens blank into a holder consisting of two cylindrical rings which define an annular or “concentric” void/”cavity” in an inner

circumferential surface. Restated with reference to the annotated Figures 1, 2, 5, and 6 excerpts below, the cylindrical holder is understood to comprise an annular gap (9) or cavity in the inner surface (See notation in magnified view of figure 2 below, right). The lens blank and holder are heated to the working temperature of the glass blank or "the softening temperature" at which point they are press molded. It is particularly noted that in the preliminary pressing stage represented by the transition from Figs 1 to 2, the optical blank radially expands into contact with the inner circumferential surface and partially into the cavity (9) to form a "projected portion". The subsequent precision molding operation represented by figures 5 and 6, further extends the projected portion in the radial direction while maintaining at least a portion of the projected portion in a "contained" state between the inner and outer circumferential surfaces.

It follows from foregoing that during the disclosed press molding, a portion of the optical element is radially extruded into the cavity (9) and is either partially or wholly (e.g. fig 2 vs. fig 6) retained by the void part of the holder. This extruded portion is construed to extend radially outward from an outer edge of the optical element. As previously noted, this projected portion is broadly construed as a "hemispherical section of the optical-element material".



Magnified view of Figure 2:

Note Optical Material (3) extends into Void part (9) And is "contained" b/w inner and outer circumferential surfaces

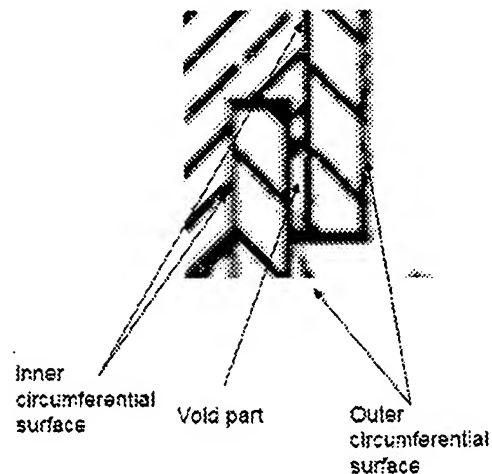


Fig 5 → Fig 6

Upon subsequent pressing, optical material extends further in the radial direction but it is still contained b/w inner and outer circumferential surfaces

Bartman indicates that an excess of glass material is utilized in order to allow for extrusion during the pressing operation (Column 2, Lines 12-13) and that the annular gap between the rings can be determined so that an effectively high pressure can be realized during the moulding process (Column 1, line 68-Column 2, Line 7). In other words, the "volume of the void" and therefore the flow resistance of the holder material are adjustable in order to realize an adequate pressure during the molding cycle.

With respect to claims 10, 12, and 18, it is understood that a cylindrical holder inherently comprises "an outer portion forming an outer circumferential surface", that the

holder material has an inherent resistance to flow, that the glass optical element material is inherently characterized by "a viscosity", a glass transition temperature and a glass softening temperature. Further in accord with the fundamental laws governing fluid dynamics, "the flow resistance of the holder material" and specifically the resistance to flow experienced by the optical element material in the annular cavity necessarily and inherently varies inversely with the viscosity of the optical element material.

Regarding Claims 16 and 19, Claim 1 recites the limitation that "the materials are heated to their own softening temperature" in line 7-8 of the identified claim. Therefore said optical-element material is inherently heated to "a temperature about 30 degrees lower than the softening temperature of the cylindrical holder material" as set forth in Claim 16 and to "a temperature between the glass transition and the glass softening temperature of the optical element material" as set forth in Claim 19.

**Claims 1- 4, 11-15, 18, and 19** are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Demeritt (US 5,274,502).

Demeritt teaches formation of a holder/optical-element assembly. As depicted in Figure 1, a blank (20) of optical material is positioned within a cylindrical holder material (22) having an outer and inner circumferential surfaces. The blank and holder materials are loaded into a precision press mold, heated to a softened state, and pressed to thereby fix the optical element to the inner circumferential surface of the holder.

In one preferred embodiment (see Figure 4 excerpt below), Demerritt teaches that the holder material may be provided with a void part located on the inner circumferential surface. It is the Examiners position that performing the disclosed press molding operation with the depicted holder would inherently result in the radial expansion of the optical material into the void part.

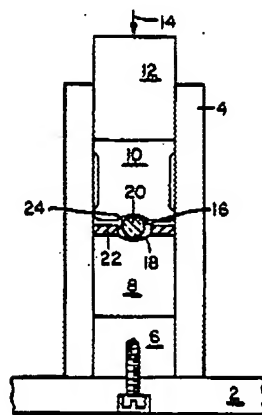
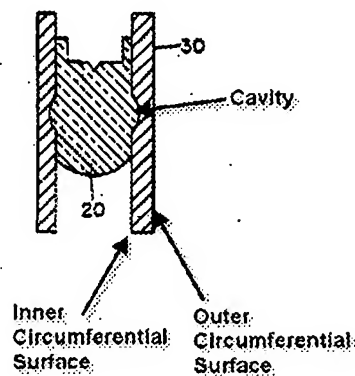


Fig. 1



### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bartman (US 4,891,053) as applied to claim 15 above.

Specifically as indicated in the rejection under 35 U.S.C. 102(b) above, the lens blank and holder material are heated to the working temperature of the glass blank. Although the instant reference does not specifically limit the holder material properties in the manner set forth in the instant claim, it would have been obvious to one of ordinary skill in the art to utilize a material presenting a softening temperature at least nominally higher than that of the optical element material being deformed. This would have been an obvious choice for one of ordinary skill seeking to maintain structural integrity of the holder material while the glass is deformed through the elevated temperature pressing operation. Therefore absent any compelling and unexpected results to the contrary, it is the Examiners position that it would have been obvious for one of ordinary skill to select an optical element holder material presenting a softening temperature "about 30 degrees higher than the softening temperature of the optical-element material."

**Claims 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bartman (US 4,891,053) as applied to Claim 1 under 35 USC 102(b) above and in further view of Angenent (US 4,895,585).



With respect to claim 3, Bartman fails to explicitly set forth the limitation wherein the cylindrical holder material is press molded in a radial direction. Angenent teaches the use of a supporting ring (see element (5) Figs 1a-c) which serves "as a temporary abutment" to improve the reproducibility of the process. (Column 1, Lines 58-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement such a supporting ring to act as a temporary abutment in the Bartman process. This would have been an obvious modification to the Bartman process to one seeking to insure proper alignment of the holder materials during the press operation and thereby to "improve the reproducibility of the process".

**Claims 6, 7, and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartman (US 4,891,053) as applied to claim 1 under 35 USC 102(b) above, and further in view of Neid (US 5,290,333).

Bartman is silent regarding the presence of micropores in the void part" as set forth in claim 6 or "micro-pores on the inner circumferential surface" as set forth in Claim 7 for the purpose of retaining the projected portion of the optical element. Neid teaches that the interlocking structure that arises when a glass penetrates the pores or cavities of a substrate "provides further mechanical bond strength by virtue of " the interlocking nature of the structure" (column 2, Lines 9-13). It would therefore have been obvious to one of ordinary skill at the time of the invention to provide cavities or micropores on the inner circumferential surface or the surface of the concentric void in the Bartman process in order to provide such an interlocking structure between the extruded glass

and the void surface. This would have been an obvious modification for one of ordinary skill seeking to enhance the structural stability and durability of the resulting structure by providing an interlocking structure.

Regarding Claim 9, projected portion of optical element material (see element (25) in Fig 6 above) disclosed by Bartman is broadly construed as a "hemispherical section of the optical-element material"

Regarding Claim 11, Bartman teaches that the two rings are made of an Ni alloy (column 3, lines 59-60) or "made from an anti-magnetic material" (column 4, Lines 4-5). It is commonly appreciated in the art that Austenitic stainless steel (e.g. 306 and 316 stainless steel ) contain between 8 and 20 percent Nickel and are therefore broadly considered nickel alloys (<http://www.contractorsunlimited.co.uk/toolbox/stainless-steel.shtml>). Further, Aluminum is commonly appreciated in the art as an anti-magnetic or non-magnetic metal. It would have therefore been obvious to one of ordinary skill in the art at the time of the invention to utilize 306 or 316 stainless steel or aluminum as the material of construction for the "holder material".

### ***Response to Arguments***

Applicant's arguments filed October 1, 2007 have been fully considered but they are not persuasive.

With respect to Applicants arguments against the rejection of claims 1-2, 4, 8, 12-16, 18, and 19 under 35 U.S.C.§102(b) over Bartman, Applicant argues that the

projected portion of optical element material "will flow out of the gap" under influence of molding pressure. Applicant concludes by virtue of forming a "collar" of glass material after the second, precision press operation, the projected portion of optical material in the Bartman disclosure can not be properly construed as "contained" in the cavity space (9).

Although it is believed that this argument has been properly addressed by the new grounds of rejection presented above, the Examiner will further treat the merits of this argument. Specifically, Applicants newly amended claim language requires that the projected portion be "contained" in the cavity (9) of the holder material. Applicant appears to intend the use of "constrained" to imply that the glass material is restricted from flowing beyond the volume defined by the cavity.

After careful consideration, the Examiner finds Applicants construction of the term "constrained" to be too narrow. Specifically, the accepted definition of the term "constrain" include "to hold or include within its volume or area" and "to have as contents or constituent parts" (contain. (n.d.). Dictionary.com Unabridged (v 1.1).

Retrieved December 06, 2007, from Dictionary.com website:

<http://dictionary.reference.com/browse/contain>. It follows that since Applicant has provided no explicit definition of the term at issue, it is appropriate to utilize the broadest reasonable construction of the term. As evidenced by the excerpt figures 2 and 6 from the Bartman reference, at least a portion of the projected optical element material is held or included within the volume defined by the cavity (9). Utilizing the broadest reasonable interpretation of Applicants claim language, the projected portion of optical

element material in the Bartman reference is therefore appropriately understood to be "contained" within the cavity (9).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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